





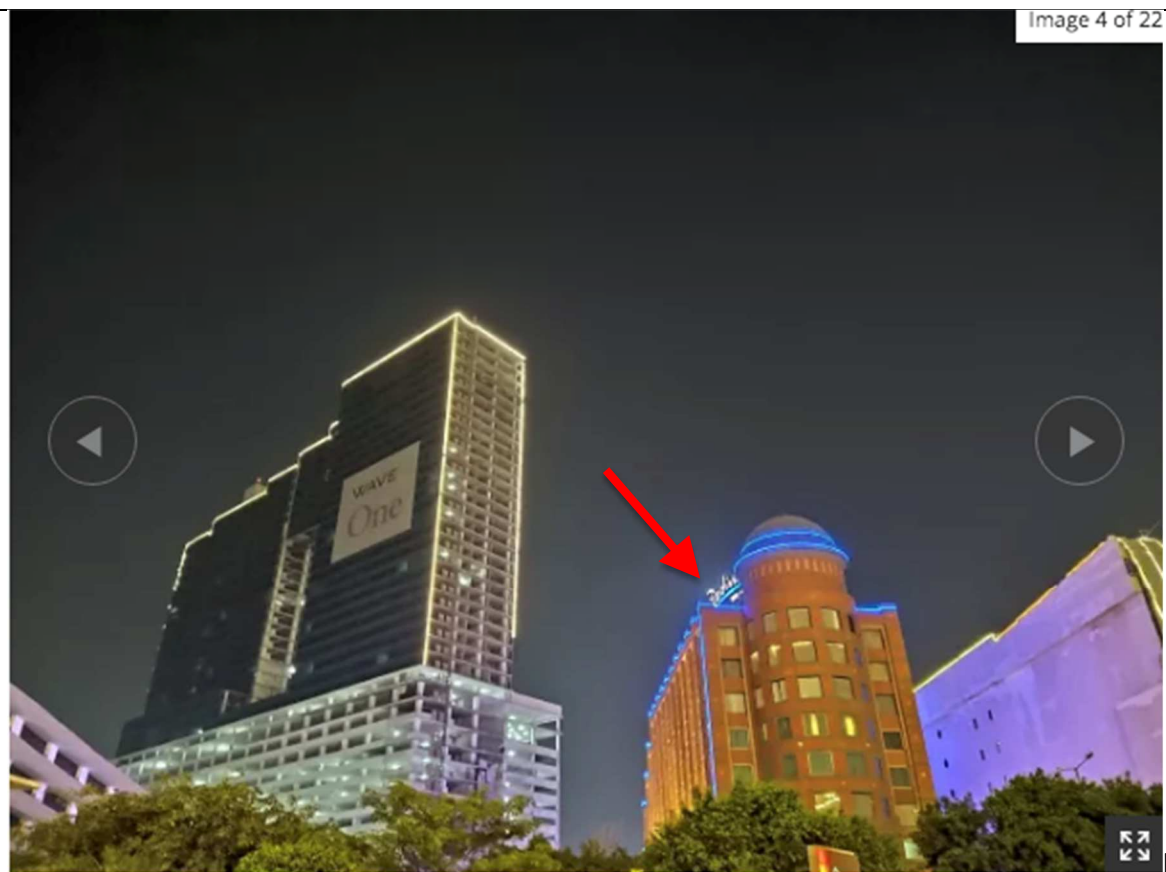



# Exhibit 9

Motorola Smartphones with AI Scene Detection - See product list at end of chart for models	
Infringement of the '147 patent	
Claim 1	Evidence
1. A method of controlling exposure of a scene image comprising the steps of;	<p>Motorola Smartphones that include the AI Scene Detection perform a method of controlling exposure of a scene image.</p> <p>For example, the smartphone includes a Scene Detection function to recognize many different types of scenes (e.g. fireworks, food, sunrise/sunsets, moon etc.) and intelligently control the camera to produce photographs with optimal quality.</p> <p><b>Get Suggested modes and scenes</b></p> <p>Enhance your photos with automatic tuning and AI scene detection.</p> <p>Your camera can suggest changing  modes, if it determines that a shot could be improved. It can also optimize the exposure, contrast, saturation, and color when it detects the following scenes:</p> <ul style="list-style-type: none"> <li>• Fireworks</li> <li>• Food</li> <li>• Motion</li> <li>• Holiday Lights</li> <li>• Sunset/Sunrise</li> <li>• Moon</li> </ul> <p>To turn these suggestions on or off:</p> <ol style="list-style-type: none"> <li>1. On the viewfinder, touch  Settings.</li> <li>2. Turn Shot optimization on  or off .</li> </ol> <p>[1]</p>
(a) sensing a scene for image data including scene brightness data from at	The Motorola Smartphone with the AI Scene Detection senses a scene for image data including scene brightness data from at least a first set of multiple regions of the scene including a subject region.

<p>least a first set of a plurality of regions of the scene including a subject region;</p>	<p>For example, in order to correctly alter the brightness to produce a photograph with optimal quality, the smartphone senses the brightness of various areas in a scene, which includes at least one area that has a subject (e.g. food). This ability aids the AI Scene Detection to automatically detect bright scenes that may have people, animals or objects as subjects, and less bright scenes such as sunrises and sunsets that typically have the sun and horizon as the subject.</p> <p>When Shot optimization is on and you're framing a photo:</p> <ul style="list-style-type: none"> <li>• If your camera detects a scene, you'll see a bar with the name of the scene (like Food). To use the enhancements, just take the photo. If you don't want the enhancements, turn the scene off  first.</li> <li>• If your camera suggests changing modes, touch the suggestion to change modes before taking the photo. Or, to use the current mode, touch .</li> </ul> <p>[1]</p>
<p>(b) deriving values representative of a brightness map of the scene in accordance with scene brightness data values corresponding to each of a first set of regions;</p>	<p>The Motorola Smartphone with the AI Scene Detection derives values representative of a brightness map of the scene in accordance with scene brightness data values corresponding to each of a first set of regions.</p> <p>For example, in order to correctly alter the brightness to produce an optimal photograph, the smartphone determines the brightness of the various areas in the scene, which are representative of a brightness map. The first image below was captured in Night Mode, whereby the smartphone detects the low light condition of the scene and properly exposes the image. In the second image that mode is disabled and the image is incorrectly exposed. Notice that the white neon sign in the first image (indicated by the red arrow) is correctly exposed so that details of the sign are shown, whereas in the second image the sign is over-exposed and the detail is not present.</p>



	<div data-bbox="577 191 1753 1068"></div> <div data-bbox="1753 1039 1785 1071">[2]</div>
<p>(c) sensing the scene for image data including range data from at least a second set of regions in the scene;</p>	<p>The Motorola Smartphone with the AI Scene Detection senses the scene for image data including range data from at least a second set of regions in the scene.</p> <p>For example, in order to perform the Bokeh blur function in the Portrait Mode, the smartphone senses image range data from multiple areas of the image (e.g. foreground and background). In the image below, the pink flower is in the foreground and the orange flower is in the background.</p>

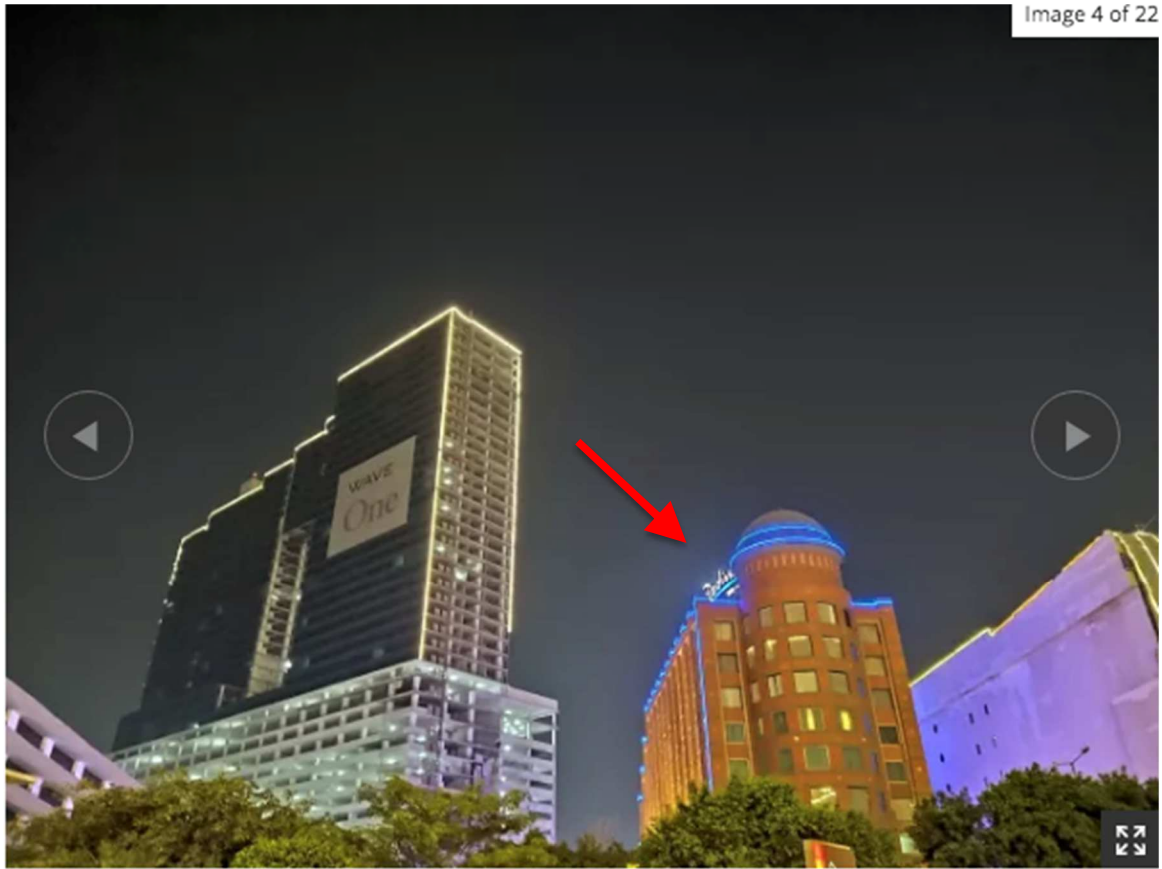
	 <p>Image 10 of 22</p> <p>[2]</p>
<p>(d) deriving values representative of a range map in accordance with range data values corresponding to each of the second set of regions and utilizing the values representative of a range map to determine a subject in the scene; and,</p>	<p>The Motorola Smartphone with the AI Scene Detection derive values representative of a range map in accordance with range data values corresponding to each of the second set of regions and utilizing the values representative of a range map to determine a subject in the scene.</p> <p>For example, the smartphone calculates range values to determine the foreground and background areas and determines a subject in the scene. For example, in the first image below with Bokeh enabled in Portrait Mode, the pink flower in the foreground is identified as a subject and the orange flower is identified as the background. In the second image Bokeh is disabled. Notice in the first image the Bokeh effect is applied to the orange flower in the background (indicated by the red arrow) so that the details of the orange flower are slightly more blurred than in the second image.</p>






	<div data-bbox="577 191 1806 1112">  </div> <div data-bbox="1806 1096 1848 1128">[2]</div>
<p>(e) comparing the range map with the scene brightness map for determining a relationship between scene brightness and the subject brightness;</p>	<p>The Motorola Smartphone with the AI Scene Detection compare the range map with the scene brightness map for determining a relationship between scene brightness and the subject brightness.</p> <p>For example, as shown in the image below, the smartphone has correctly determined the relationship between the brightness of the white neon sign (see red arrow) and adjacent building, which are the subject, and the backdrop, which includes the night sky. As a result, the image is correctly identified as</p>



<p>and,</p>	<p>a low light scene.</p> <div data-bbox="577 256 1732 1120">  </div> <p>[2]</p>
<p>(f) controlling the exposure by controlling artificial illumination upon the scene, whereby a relationship of ambient and artificial illumination is generally obtained based</p>	<p>The Motorola Smartphone with the AI Scene Detection controls the exposure by controlling artificial illumination upon the scene, whereby a relationship of ambient and artificial illumination is generally obtained based on the relationship between scene brightness and the subject brightness.</p> <p>For example, the result of scene recognition depends on the scene illumination as well as the location of the subject in the scene. The smartphone has a built-in flash, which in “Auto” mode automatically illuminates the subject, as needed, depending on the ambient lighting conditions of the scene. In the</p>

<p>on the relationship between scene brightness and the subject brightness.</p>	<p>last image below, which was correctly identified as a low light scene, the AI Scene Detection chose not to fire the flash, as would normally happen when the camera is in Auto Mode and the scene is dark. Under other conditions, for example dark scenes where the subject is not illuminated (e.g. a person at night), the camera would fire the flash.</p> <p>Photography settings</p> <p>Use a flash</p> <p>To set the flash mode (off, always on, or auto), touch  on the viewfinder.</p> <p>[1]</p>
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**Product List**

Motorola Moto G8 Power (Motorola Sofia R)

Motorola Moto G8 Stylus (Motorola Sofia+)

Motorola Moto G8 Optimo Maxx / G8 Power (Motorola Sofia R2)

Motorola Moto G8 Power / G Power 2020 (Motorola Sofia R2)

Motorola RAZR 2019 (Motorola Voyager)  
Motorola Moto One Hyper (Motorola Def)  
Motorola Moto One Zoom Global (Motorola Parker)  
Motorola Moto One Action (Motorola Troika)  
Motorola Moto G7 Optimo Maxx (Motorola Ocean)  
Motorola Moto G7 Optimo (Motorola Channel)  
Motorola Moto G7 (Motorola River)  
Motorola Moto G6 / Moto G Gen 6 (Motorola Blaine)

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[http://phonedb.net/index.php?m=device&id=16430&c=motorola\\_moto\\_g8\\_power\\_td-lte\\_na\\_xt2041-4\\_g\\_power\\_2020\\_xt2041-7\\_motorola\\_sofia\\_r2&d=detailed\\_specs](http://phonedb.net/index.php?m=device&id=16430&c=motorola_moto_g8_power_td-lte_na_xt2041-4_g_power_2020_xt2041-7_motorola_sofia_r2&d=detailed_specs)

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